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## Perception of typical Ukrainian foods among an Italian population

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### ABSTRACT

The Russian-speaking communities constituted the most recent flux of migration to Italy: as a consequence, their foods are still little known. This work was aimed at exploring the attitudes of Italians towards eastern European foods.

A structured questionnaire was submitted to a sample Italian population in order to analyze food neophobia, awareness/information about traditional markets of the eastern migrant communities, and the specific interest in 10 selected traditional foods. Food neophobia was higher among the elderly and among the less educated people. The awareness of eastern foods was higher among the elderly, whereas willingness to try was higher among the younger people. Education did not affect awareness, but increased willingness to try. The interest in specific foods was generally lower in the less educated people, the elderly and the neophobics, with differences depending on the nature of foods.

This research indicates some potential for the development of new products, that could arise from an enhanced exchange of knowledge between Italians and Ukrainians and other Russian-speaking communities.

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### 1. Introduction

Food is one of the most accessible instruments of cultural interchange, and a key factor for the development of new uses and products for both the host locations and the migrant communities.

Food quality has been recently re-defined in terms of perception, within a scheme stressing the importance of the subjective mediation of intrinsic and extrinsic food traits (Oude Ophuis & Van Trijp, 1995). This scheme, including search quality cues, experience and credence quality attributes, fits perfectly also as a background for the perception of the foods of migrant communities, which represents the subject of this paper.

Traditional foods are at present highly valued by food chain stakeholders, from consumers to processors. Indeed, the traditional/local character attained one of the highest motivation ratings for food choice and purchasing, according to a Eurobarometer report (Holt & Amilien, 2007). The review of motivations for this interest has been the background of some recent papers (Pieniak, Verbeke, Vanhonacker, Guerrero, & Hersleth, 2009).

The definition of traditional food does not easily match any standards. A formal definition, based on somewhat objective traits, was aimed at the substantial safeguarding of the "traditionality" character (Trichopoulou, Soukara, & Vasilopoulou, 2007), whereas a con-

sumer-driven approach to traditional food definition was adopted in the perspective of introducing innovation in the traditional food concept (Guerrero et al., 2009). From a classic sociological definition, a traditional food is a representation of a group, including all interactions between people, knowledge and local resources (Ber-tozzi, 1998, cited by Jordana, 2000). In this respect, the perception of traditional food value in local communities is a typical experience attribute, spontaneously occurring through the association of generally positive cues and a complex of perceived immaterial traits. On the other hand, western European urban consumers have largely lost the knowledge of the origin of the foods they eat. In this context, "traditionality" tends to become a credence food quality attribute, the perception of which needs communication from third parties. Holloway et al. (2006) traced the multi-facet benefits of a local food-based, alternative food chain, with respect to local economies, quality of food chain, fair trade, and preservation of plant and animal diversity, indicating a series of other typical credence characters, that could affect traditional food acceptance in different ways (Roininen, Arvola, & Lähteenmäki, 2006).

Traditional foods are not the only item of food perception, in relation to nationality. In fact, during the course of human history, food migrated with people. Foods of migrant communities have been adopted either as new fashion foods, or basic staples for survival, depending on the context. Therefore, traditional foods become ethnic foods outside the places of origin. Ethnic and fusion foods are presently considered other important food market items and have often been included in recent research into food habits of

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western societies (Bäckström, Pirttila-Backman, & Tuorila, 2003; Tuorila, Lähteenmäki, Pohjalainen, & Lotti, 2001).

Health promotion is another typical credence attribute, currently often associated with traditional foods, although with still scarce experimental evidence (Grivetti & Ogle, 2000; Heinrich, Leonti, Nebel, & Peschel, 2005; Trichopoulou et al., 2000).

In approaching foods from migrant communities, western consumers are therefore often faced with a triple credence message (traditional, ethnic and healthy), whereas it has been pointed out that the recovery of self-awareness is a tool to determine longer-lasting interest for food (Heinrich & Prieto, 2008). The analysis of individual perceptions appears therefore a requisite for an effective exploration of the acceptance of foods from recently established migrant communities.

A final important point to be taken into account is the individual attitude to new foods, commonly referred to as food neophobia. Food neophobia is defined as the reluctance to eat, or the avoidance of unfamiliar foods (Birch & Fisher, 1998; Pliner & Hobden, 1992). It is considered as a kind of defense mechanism, preventing the consumption of potentially harmful foods (Cooke, Haworth, & Wardle, 2007). Food neophobia has been studied in-depth in children, since it is considered a disorder with a potentially negative effect on adequate dietary variation (Dovey, Staples, Leigh-Gibson, & Halford, 2008). Food neophobia has been associated with different causes: familiarity (Falciglia, Pabst, Couch, & Goody, 2004), genetic factors (Knaapila et al., 2007), cultural and socio-economic contexts (Flight, Leppard, & Cox, 2003), and ethnicity (Olabi, El Ouyouan, Baghdadi, & Morton, 2009). Research has clearly indicated food neophobia as an important determinant of food choices (Henriques, King, & Meiselman, 2009; Tuorila et al., 2001). As a consequence, this trait also affects the willingness to try foods of different cultures, and should therefore be taken into consideration when investigating the acceptance of immigrants' traditional foods by the host populations.

Italy was one of the favorite destinations for the migrations from eastern Europe, following the independence of the former SSRU nations. Ukrainians and Moldavians, the latest among migration fluxes, have recently shown the fastest growth, with respectively a 13 and 15-fold increase of the resident numbers from 2002 to 2009 (ISTAT, 2010). At the end of 2009, the Ukrainians and Moldavians had the fifth and ninth position, with 174,129 and 105,600 official residents, a figure probably considerably lower than the real number. The most recent flux of Moldavian migration has led to a still rather unstructured community, whereas the Ukrainian community is starting to organize itself, as indicated, for example, by the more than 60 Ukrainian churches established in Italy. Another form of organization of the Russian-speaking communities is represented by the recent development of markets, established without any rule and control, where typical foods of these communities are also sold.

Compared to other communities (the Chinese, first of all, but also the North African, Latin American, Middle-Eastern and Thai-Indonesian communities), the food habits and traditions of the Ukrainian and other Russian-speaking communities are still lesser known in Italy. However, contact between Italian and eastern foods is gradually increasing, with a mutual perception of traditional foods of the other community as new foods, whose acceptance depends on personal attitudes and the specific characteristics of individual foods.

With this background, an investigation was carried out on a sample Italian population aimed at understanding:

- the knowledge and perception of traditional foods of the Ukrainian and related Russian-speaking communities, also in relation to food neophobia levels;

- the willingness to try these foods and to introduce them into their diet;
- in perspective, the possibilities that an acquired knowledge of these foods could lead to the trade or local production of perishable ingredients for eastern European food preparation.

## 2. Materials and methods

### 2.1. Questionnaire organization

A structured questionnaire was prepared, consisting of the three parts described below. The questionnaire also included questions relating to general individual information (age, gender, level of education, profession), and to visits to Moldavia, Russia, Belarus and Ukraine.

#### 2.1.1. Food neophobia test (FNS)

This part included the 10 original items described by Pliner and Hobden (1992). However, in the final version for submission, a five point scale, instead of seven, was used. In fact, preliminary run tests carried out with the original 7-point scale revealed a poor discrimination between the two intermediate scores 2–3 and 5–6, at the two sides of the scale, suggesting their merging and leading to a final 5-point scale. In this case, the anchor words were: 1: completely disagree, 2: moderately disagree; 3: not agree or disagree; 4: moderately agree; 5: completely agree. The use of a 5-point scale is also consistent with Henriques et al. (2009). A food neophobia index, with a potential 10–50 range, was obtained by summing the individual item scores, after the positive items were reversed, as is usually done (Tuorila et al., 2001).

#### 2.1.2. General awareness/information index, about Ukrainian foods and food markets, with seven questions

A focus group discussion was carried out in order to determine the relevant questions to be included in this part of the questionnaire. The focus group included the authors, three Russian-speaking migrants living in Italy and up to five colleagues. Three separate sessions were carried out, after which a consensus was reached on the following seven questions:

- (B1) Are you aware of the presence of Russian-speaking immigrants?
- (B2) Are you aware of the presence of small ethnic markets of these communities?
- (B3) Did you ever visit these markets?
- (B4) Are you interested in them/in visiting them?
- (B5) Do you know the traditional foods of Russian-speaking countries?
- (B6) If “yes”, are you interested in introducing them into your diet?
- (B7) If “no”, are you interested in knowing and trying them?

Possible answers were no/yes for all questions; “not sure” was allowed for questions “B4”, “B6”, and “B7”. Scores were yes = 2; not sure = 1, no = 0. Items “B6” and “B7”, being alternatives, were pooled during data processing. A general awareness/information index, with a potential 0–12 range, was obtained by summing the individual item scores.

#### 2.1.3. Specific interest index in representative foods

Ten traditional dishes were chosen on the basis of focus group discussion and the experience of the authors regarding some traditional, frequently consumed foods, representing the different parts of a meal, focussing on foods of plant origin:

- (C1) borshch: a vegetable soup, presented in its various forms with garden beet and cabbage as the main ingredients;
- (C2) varenyky: ravioli-like pasta, filled with either mashed potatoes, cabbage, minced meat or milk curd; eaten after boiling in water and generally seasoned with butter;
- (C3) pampusky: small soft bread pieces, strongly garlic flavored, used with soups;
- (C4) grechnaya kasha: a sort of buckwheat gruel, dressed with butter and fried onions;
- (C5) bliny: pancakes, with different possible side-dressings;
- (C6) pirashky: fried or baked pastries, filled with potatoes, cabbage, or meat;
- (C7) ponchyky: pieces of fried dough balls, dusted with confectioner's sugar;
- (C8) khalvâ: oilseed pâté (mostly from sunflower seeds), with variable amounts of added textured sugar;
- (C9) siemacky: toasted sunflower seeds;
- (C10) kvass: very low-alcohol lightly sparkling beverage, obtained from the fermentation of different kinds of plant products, mostly bread or cereal seeds.

The interest in each item was rated as: yes (score 2), do not know (score 1), no (score 0). A specific interest index, with potential 0–20 range, was obtained by summing the individual item scores.

## 2.2. Questionnaire submission

The questionnaire sheets were submitted in the survey area (province of Bologna, Northern Italy) either by e-mail or paper in two rounds. During the first, the submission involved the personnel (all qualifications) of the Faculty of Agriculture, Bologna and the Bologna seat of the National Research Council, and the members of some social circles of different income levels. During the second round, the questionnaire was submitted to people of different age, gender and social level with the help of students of the Food Science Degree, University of Bologna. In all cases, no preliminary sample stratification was planned. Therefore a convenience sampling strategy was adopted with respect to access to respondents, and no preliminary expectation about possible biases could be inferred.

## 2.3. Data processing

All the retrieved questionnaires were carefully reviewed and only the complete ones and those without any evident faults in compilation were retained, making a total of 283 responses.

The food neophobia (FNS), general awareness and interest indices were calculated, as reported above. To allow easier comparisons they were also re-scaled with respect to the maximum possible values (0–1 range).

Analysis of variance was applied to detect the effect of respondent age, gender, level of education and visits to Russian-speaking countries on the three indices.

Principal component analysis was applied to the original food neophobia data (individual items, not re-scaled), either without rotation or by means of a varimax rotation procedure.

The respondents were classified into three neophobia classes, neophilics, neither neophilics nor neophobics (hereafter referred to as “neutral”), and neophobics. The cut-off points for class definition were set at one standard deviation from the non-rescaled FNS index average (Tuorila et al., 2001).

The effects of respondent age, gender, level of education, visits to Russian-speaking countries and food neophobia on the distribution of responses about individual items of the general awareness and interest tests were detected by means of a  $\chi^2$  analysis.

## 3. Results

A total of 283 questionnaires were retained for final analysis. Table 1 reports some basic demographic data of the final sample population, that was representative of the gender ratio of the survey area (province of Bologna). However, the age class 35–45 years was over-represented and the classes 46–65 and >65 were under-represented, with respect to official demographic statistics. With respect to level of education, university degree was over-represented and primary school level under-represented. These deviations were mainly due to a lower response rate of the under-represented classes, rather than to a substantial initial bias of the target population structure.

Table 1 also reports the average values of the food neophobia, awareness/information and interest indices, rescaled to a relative 0–1 range, for easier comparison.

Binary interactions between factors of variation were not significant for any of the three indices. The higher order interaction sum of squares were pooled to the error term in the analysis of variance, since some combinations were missing.

### 3.1. Food neophobia

With respect to food neophobia groups, an almost equivalent proportion of respondents (about 17%) were classified as food neophilics or neophobics, with a dominance of a neutral approach to new foods (around 66%). Food neophobia slightly increased with age, with significantly higher values in the >65 class. Food neophobia also progressively and significantly decreased with increasing education level, and was lower in people who had experience of visits to eastern European countries (Table 1). Fig 1 integrates the average data of Table 1, reporting the distribution of the three neophobia groups (neophobics, neutral and neophilics) into the different gender, age, education level and “visit to eastern European countries” classes of the sample population. A significantly higher percentage of neophobics was detected in the >65 year age class; primary school education corresponded to a significantly higher percentage of neophobics, whereas neophilic rate increased with education level. The percentage of neophobics was higher among people without experiences of visits to eastern European countries. The distribution in food neophobia groups was not affected by gender.

Table 2 reports the loadings of the original neophobia test items to un-rotated (PC) and varimax rotated (PCv) principal components. Varimax rotation often allows a more clear analysis of the principal component correlation structure to the original variables (StatSoft, 2011), and has frequently been applied to the investigation of the structure of the Food Neophobia Index (Olabi et al., 2009; Tuorila et al., 2001).

The combined observation of the two PC sets, together with regression analysis between PCs and the neophobia index, allowed a rather clear explanation of the sample population's neophobia structure and its latent determinants.

PC1 can be clearly identified as a specific neophobia factor: in fact it is significantly correlated to all the neophobia items, with the highest correlation to all of them, except items A8 and A9. The interpretation of PC1 as a specific neophobia factor is also supported by its very high correlation coefficient ( $r = 0.991$ ,  $p < 0.001$ ) to the calculated food neophobia index. This fact, together with a Chronbach's alpha value of 0.84, calculated on all 10 neophobia test items, supports the idea of the substantially one-dimensional nature of the neophobia index itself.

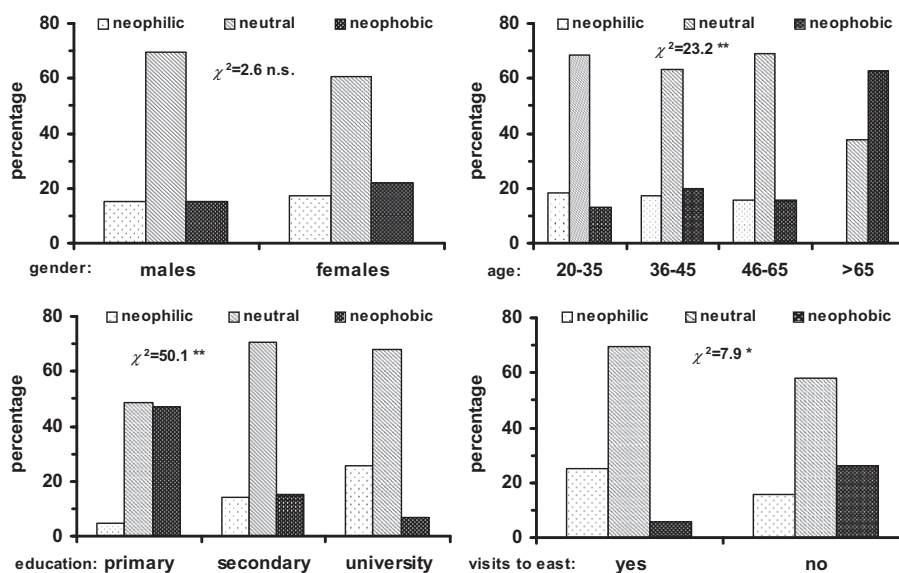
PC2 had the highest correlation to item A8 (I am very particular about the foods I eat), and was slightly significantly correlated to the reversed items of the food neophobia test: it therefore repre-

**Table 1**  
Structure of the Italian respondents to the questionnaire, in comparison to official population statistic data of the province of Bologna, and neophobia, information/awareness and interest indices, rescaled to relative values.

	Sample characteristics			Calculated indices (rescaled to 0–1 range)		
	(n.)	% (Sample)	% (Province of Bologna)	Food neophobia <sup>b</sup>	Information/awareness <sup>b</sup>	Interest in specific foods <sup>b</sup>
<i>Gender</i>						
Male	129	45.6	48.7	0.407	0.440	0.554
Female	154	54.4	51.3	0.425	0.415	0.587
Significance				ns	ns	ns
<i>Age</i>						
20–35	92	32.5	28.7	0.354 b	0.409	0.628
36–45	111	39.2	18.6	0.398 b	0.431	0.555
46–65	64	22.6	32.4	0.419 b	0.473	0.556
>65	16	5.7	20.2	0.663 a	0.359	0.428
Significance				**	ns	ns
<i>Education</i>						
Primary	64	22.6	41.7	0.561 a	0.348 b	0.388 a
Secondary	113	39.9	41.1	0.396 b	0.442 a	0.590 b
University	106	37.5	17.2	0.317 c	0.464 a	0.663 b
Significance				**	**	**
<i>Visits to eastern Europe</i>						
Yes	36	–	–	0.331 b	0.609 a	0.661 a
No	247	–	–	0.414 a	0.403 b	0.559 b
Significance <sup>a</sup>				*	**	*

<sup>a</sup> ns, \*, \*\*: respectively non-significant, significant for  $P \leq 0.05$  and for  $P \leq 0.01$  according to Analysis of variance.

<sup>b</sup> Different letters indicate significant differences according to Tukey's HSD,  $P \leq 0.05$ .



**Fig. 1.** Distribution of the food neophobia classes in the sample Italian population.

sents a generic prevailing negative attitude to new food experiences.

PC3, on the contrary, had the highest correlation to item A9 (I will eat almost anything) and was slightly negatively correlated to the not reversed items of the food neophobia test, representing therefore a generic positive attitude to new food experiences.

The analysis of the varimax rotated principal components (PCv) added relevant information about the structure of neophobia of the sample population.

The two generic attitude factors, identified by items A8 and A9, are represented by PCv2, to which they had the highest correlation.

The other positive (reversed) and negative (not reversed) items of the food neophobia test identify two different components in the rotated solution, explaining an almost equivalent percentage of total variance: PCv1, showing the highest correlations to the

positive items, and PCv3, showing the highest correlations to the negative items. Basically, the information contained in PC1 was split into two components.

Both PCv1 and PCv3 were also slightly correlated to the other items except, in the case of PCv3, item A6, representing, by nature, a question not in everybody's experience, being related to "dinner parties".

A final contribution to the neophobia structure was given by a forward stepwise multiple regression (Table 3) between the neophobia index and the two principal component sets (non-rotated and varimax rotated). For non-rotated PC, PC1 alone accounted for more than 99% of variation; however, PC2 and PC3 added small, although significant, contributions. Considering the rotated components, PC3v entered first, followed by PC1v and PC2v; all of them added significant and not negligible contributions to the regres-

**Table 2**  
Loadings of the original food neophobia test items to the first three principal components.<sup>a</sup>

Food neophobia test items <sup>b</sup>		Principal components					
		Non-rotated			Rotated		
		PC1	PC2	PC3	PC1v	PC2v	PC3v
A1r	I am constantly sampling new and different foods	<b>0.749</b>	−0.229	0.252	<b>0.744</b>	0.065	0.344
A2	I don't trust new foods	<b>0.751</b>	0.067	−0.340	0.249	0.107	<b>0.782</b>
A3	If I don't know what is in a food, I won't try it	<b>0.719</b>	0.072	−0.356	0.216	0.098	<b>0.769</b>
A4r	I like foods from different countries	<b>0.764</b>	−0.294	0.253	<b>0.783</b>	0.012	0.348
A5	Ethnic foods look too weird to eat	<b>0.690</b>	0.006	−0.337	0.238	0.039	<b>0.729</b>
A6r	At dinner parties I will try a new food	<b>0.525</b>	−0.151	0.441	<b>0.682</b>	0.155	0.061
A7	I am afraid to eat things I have never had before	<b>0.662</b>	0.099	−0.299	0.203	0.130	<b>0.692</b>
A8	I am very particular about the foods I will eat	0.345	<b>0.797</b>	0.005	−0.117	<b>0.797</b>	0.328
A9r	I will eat almost anything	0.380	0.554	<b>0.557</b>	0.353	<b>0.796</b>	−0.051
A10r	I like to try new ethnic restaurants	<b>0.785</b>	−0.233	0.146	<b>0.704</b>	0.030	0.442
	Fraction of explained variance	0.430	0.118	0.110	0.274	0.134	0.276

<sup>a</sup> Bold: highest loading values, within sets (non-rotated and rotated).

<sup>b</sup> r = reversed items.

**Table 3**  
Forward stepwise multiple regression between the neophobia index and the non-rotated (PC) and varimax rotated (PCv) principal components.

Non-rotated principal components			
Order of entering	PC1	PC2	PC3
Progressive $r^2$	0.983	0.994	0.999
$\beta$ in final equation <sup>a</sup>	0.991**	0.108**	0.068*
Rotated principal components			
Order of entering	PC3v	PC1v	PC2v
Progressive $r^2$	0.461	0.873	0.999
$\beta$ in final equation <sup>a</sup>	0.679**	0.642**	0.355**

<sup>a</sup> Standardised multiple regression coefficients; \*, \*\*: respectively significant for  $P \leq 0.05$  and for  $P \leq 0.01$ .

sion, indicating that both the specific neophobia factors and the generic attitude (represented by PCv2) have a role in determining the neophobia index.

### 3.2. Awareness/information

The general awareness and information about the presence and activities of eastern European migrants was lower in people with only primary school education, and higher in people who had visited eastern European countries (Table 1).

Table 4 reports the percentages of “yes” responses to the individual questionnaire items. Gender had no effect on the response distribution to all the awareness/information test items.

The awareness of the presence of migrants (item B1) was generally high, with slightly, but significantly higher values in the older age classes. The awareness of the presence of ethnic markets (B2) peaked in the 46–65 year age class, and was very low in the younger groups. The interest in visiting the markets (item B4) was lower in the older age class, although with a non-significant general  $\chi^2$ , and the interest in trying foods decreased with age.

Level of education rather strongly affected the response to all the items, except the awareness of the presence of migrants (B1) and visits to markets (B3). The distribution of responses between education levels differed, for different items. Interestingly, the awareness of markets was lower in the more educated people, in counter-tendency with the pattern of interest in visiting them and of other items.

Having visited eastern European countries significantly affected most items, with the highest positive effect on food knowledge regarding these countries.

Finally, food neophobia level strongly affected the willingness to visit markets and to try foods, but had no effect on the response to the awareness items.

### 3.3. Specific interest in individual foods

The interest index in specific foods had a similar pattern to the awareness/information index; in fact, it was significantly higher in people who had visited eastern European countries, and lower in the group with only primary school education (Table 1).

Fig 2 reports the average percentages of interest in trying the 10 individual selected foods. The highest interest was in varenyky, pirashky and ponchyky, a sweet food with a totally peculiar pattern of interest. The least attractive foods were khalvå, kvass, bors-hch, and pampushky.

With respect to population structure (Table 5), gender again had the least significant effect on individual food interest. Females were significantly more interested than males in buckwheat kasha and ponchyky.

The younger generations were more interested in varenyky and pirashky. Ponchyky obtained quite a high rate of interest, and were equally appreciated by the youngest and the oldest age classes.

People with only primary school education showed a lower interest in all the dishes, except for ponchyky.

Having visited eastern European countries positively affected the interest in the foods more typical of these countries' eating habits: bors-hch, pampushky and kvass, with a non-significant effect on the others.

Finally, food neophobia affected the interest in all foods, except for ponchyky, that were equally and highly appreciated, irrespective of the neophobia class. Again, foods which deviated more from ordinary Italian experience (bors-hch, pampushky, khalvå and kvass) were the least positively rated by neophobics.

## 4. Discussion

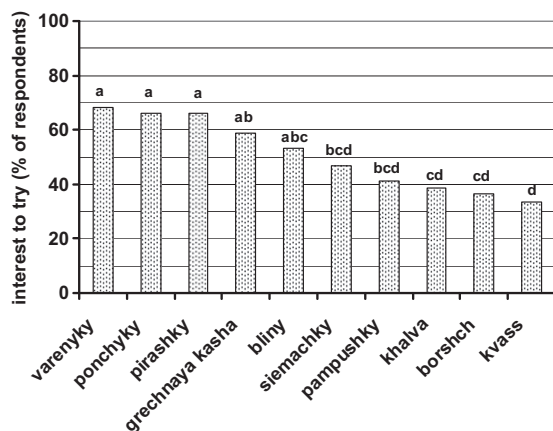
### 4.1. Food neophobia

The distribution of the sample population into neophobia groups (FNG), despite being the result of a convenience sample with some bias in the frequency of demographic classes, is consistent with the findings of Tuorila et al. (2001) in a Finnish population. A slightly lower percentage of neophobics was detected with respect to the American data of Henriques et al. (2009) who, however, considered different cut-off points for neophilics and neophobics.

**Table 4**  
Percentage of “yes” responses of the sample population to the awareness/information test items.

	B1 awareness immigrants	B2 awareness markets	B3 visits to markets	B4 interest in markets	B5 knowledge foods	B6–B7 interest in trying foods
<i>Gender</i>						
Male	95.3	20.8	8.5	45.0	24.8	36.4
Female	94.2	27.9	4.5	37.0	22.7	39.0
$\chi^2$ <sup>a</sup>	0.2 ns	2.0 ns	1.9 ns	2.7 ns	0.2 ns	0.6 ns
<i>Age</i>						
20–35	90.2	12.0	4.3	38.0	22.8	41.3
36–45	94.6	26.1	6.3	38.7	23.4	37.8
46–65	100	37.5	9.4	51.6	28.1	35.9
>65	100	25.0	6.3	25.0	12.5	25.0
$\chi^2$ <sup>a</sup>	8.2*	14.0**	1.6 ns	10.4 ns	1.8 ns	12.8*
<i>Education</i>						
Primary	89.1	32.8	6.3	18.8	17.2	23.4
Secondary	97.3	31.0	8.9	40.7	17.7	36.3
University	95.3	11.3	3.8	53.8	34.0	48.1
$\chi^2$ <sup>a</sup>	5.7 ns	15.1**	2.4 ns	32.2**	9.9**	38.1**
<i>Visits to eastern Europe</i>						
Yes	97.2	47.2	19.4	61.1	80.6	33.3
No	94.3	20.6	4.4	37.7	15.4	38.5
$\chi^2$ <sup>a</sup>	0.5 ns	12.2**	11.9**	7.2*	73.9**	0.4 ns
<i>Food neophobia</i>						
Neophilic	97.8	23.9	13.0	60.9	32.6	63.0
Neutral	94.0	24.0	6.0	43.7	24.0	37.2
Neophobic	94.4	22.2	1.9	13.0	14.8	18.5
$\chi^2$ <sup>a</sup>	1.1 ns	0.1 ns	5.3 ns	36.1**	4.4 ns	36.8**

<sup>a</sup> ns, \*, \*\*: respectively non-significant, significant for  $P \leq 0.05$  and for  $P \leq 0.01$ .



**Fig. 2.** Percentage of “yes” answers to the questions related to the interest in trying the 10 selected eastern European foods. Different letters indicate significant differences according to Tukey’s HSD,  $P \leq 0.05$ .

Contrary to what emerged in other experiences (Ritchey, Frank, Hursti, & Tuorila, 2003) the neophobia index calculated on all the 10 original items seems to be substantially mono-dimensional. Some interesting facets appeared however, since three components can be identified. Two of them are linked to specific positive and negative attitudes to new foods, and the third represents a more generic attitude to food variation sampling. The partially different meaning of the reversed and not reversed items was already indicated by Ritchey et al. (2003). In our case, the analysis of the food neophobia structure revealed a lower tendency of the elderly to use positive worded items in responding to the food neophobia questionnaire, and a lower generic willingness of males to try new foods. A more generic component of food choice, identified with item A8 by Tuorila et al., 2001, included both items A8 and A9 in our experience.

Another peculiar aspect of our investigation, including people from all education levels, age and social status, was the somewhat

lower efficacy of item A6, connected to dinner parties, that is not part of the experience of the whole population.

#### 4.2. Awareness/information

On the whole, the higher awareness of older generations of eastern European communities was not accompanied by a parallel higher interest in foods. This fact could be associated with the higher average food neophobia of the elderly, but also with a generic lower enthusiasm of trying new experiences.

Interestingly, the interest in trying foods was almost completely levelled, regardless of having visited eastern European countries. This last pattern is similar to what is described for the elderly: the combination of these two findings may be representative of a relatively low attractiveness of eastern European foods. Whatever the possible reasons for this, a resistance to an open mind regarding new communities can play a role: in this respect, suspicion has been indicated as a determinant of food social representation (Huotilainen & Tuorila, 2005) and, ultimately, food acceptance.

#### 4.3. Specific interest in individual foods

The interest in specific foods seems to be generated by different motivations and personal perceptions. As an example, recent investigations studying the determinants of food choice revealed the importance of familiarity and food naturalness as drivers for local traditional food consumption in Italy and other European countries (Pieniak et al., 2009). The results of our experience suggest that some of these factors may also explain the interest of Italians for Ukrainian traditional foods.

The familiarity with specific foods seems to have played a role in determining the intention to try, especially among people without previous knowledge of the indicated foods and who had not visited eastern Europe. This familiarity seems to have acted through the elicitation of either positive or negative stimuli.

Varenyky and pirashky obtained quite a high rate of intention to try responses, likely because of their similarity with foods also

**Table 5**  
Percentage of “yes” responses of the sample population to specific food interest test items.

	C1 borshch	C2 varenyky	C3 pampusky	C4 kasha	C5 bliniy	C6 pirashky	C7 ponchiky	C8 khalvâ	C9 siemacky	C10 kvass
<i>Gender</i>										
Male	38.0	66.7	41.9	50.4	50.4	66.7	58.1	36.4	41.9	35.7
Female	35.1	69.5	40.9	65.6	55.8	65.6	72.7	39.6	50.6	31.8
$\chi^2$ <sup>a</sup>	1.5 ns	4.7 ns	0.8 ns	6.9*	2.3 ns	1.2 ns	8.4*	2.3 ns	2.8 ns	1.0 ns
<i>Age</i>										
20–35	37.0	75.0	42.4	59.8	53.2	79.3	76.1	46.7	45.6	41.3
36–45	34.2	66.7	43.2	60.3	55.9	62.2	62.2	34.2	48.6	36.0
46–65	42.2	67.2	42.2	56.3	54.7	59.4	56.3	37.5	50.0	23.4
>65	25.0	43.8	18.8	50.0	31.3	43.8	75.0	25.0	25.0	12.5
$\chi^2$ <sup>a</sup>	5.1 ns	14.9*	10.4 ns	7.9 ns	8.6 ns	13.4*	9.45 ns	4.9 ns	5.5 ns	13.3*
<i>Education</i>										
Primary	23.4	46.9	21.9	37.5	28.1	43.8	54.7	18.8	31.3	17.2
Secondary	31.0	72.6	42.5	60.2	52.2	74.3	73.5	39.8	46.0	32.7
University	50.0	76.4	51.9	69.8	69.8	70.7	65.1	48.1	56.6	44.3
$\chi^2$ <sup>a</sup>	19.9**	29.6**	23.4**	20.4**	28.2**	19.8**	7.4 ns	19.2**	12.6*	15.4**
<i>Visits to eastern Europe</i>										
Yes	52.8	69.4	63.9	55.6	63.9	72.2	75.0	44.4	52.8	47.2
No	34.0	68.0	38.1	59.1	51.8	65.2	64.8	36.8	45.7	31.6
$\chi^2$ <sup>a</sup>	8.8*	1.08 ns	9.0*	1.5 ns	2.0 ns	0.7 ns	1.9 ns	2.8 ns	1.5 ns	6.1*
<i>Food neophobia</i>										
Neophilic	71.7	87.0	52.2	76.1	78.3	87.0	71.7	56.5	63.0	47.8
Neutral	32.8	69.9	42.6	56.3	53.0	66.7	64.5	37.7	47.0	35.0
Neophobic	18.5	46.3	27.8	51.9	33.3	46.3	66.7	24.1	31.5	16.7
$\chi^2$ <sup>a</sup>	44.0**	20.3**	11.4*	11.4*	20.4**	19.6**	3.4 ns	18.7**	12.3*	21.0**

<sup>a</sup> ns, \*, \*\*: respectively non-significant, significant for  $P \leq 0.05$  and for  $P \leq 0.01$ .

prepared in Italian cuisine. In fact, pirashky are a kind of baked (or fried) folded flat bread, with different fillings, conceptually very similar to Italian “calzoni”. Varenyky are a kind of filled pasta, absolutely similar to Italian “ravioli”.

On the other hand, unfamiliar foods, strongly deviating from Italian knowledge, and almost completely unknown, as types, like kvass and khalvâ, were, on average, the least attractive. Finally, familiarity with one or more ingredients listed in the short food description may have also played a role in determining a positive or negative intention to try responses. Sunflower seeds and sugar, the khalvâ ingredients, are clearly perceived as highly caloric and, as such, negatively rated. Pieniak et al. (2009) highlighted that weight control issues negatively affected the general attitude towards some traditional food consumption. Low interest in trying foods was also received by the foods containing ingredients sometimes associated with negative sensory or social aspects, like garlic and cabbage, or simply not commonly used: this was the case with borshch, a vegetable soup containing different ingredients with respect to Italian soups, and pampushky, a garlic bread.

With respect to the differences in intention to try, in relation to population characteristics, the higher interest of young people in varenyky and pirashky can be related to the recall of the fast-food experience; that in kvass, to the potential appeal of this low-alcoholic, sparkling, beverage, perhaps also evocating something exciting. The interest of older people for ponchiky may be related to preference of the elderly for high levels of sugar in foods because of taste impairments (Murphy & Withee, 1986; Rolls, 1999). The preference of women for ponchiky, one of the few gender differences, is consistent with the observation of the significantly higher desire of women to eat sweets in comparison with men (Levin Pelchat, 1997).

The interest in foods differing considerably from Italian cuisine of the respondents who had visited eastern countries is likely linked to emotional feelings, interest in foreign cultures and memories of journeys and holidays, as also observed in the case of the attitude of the Belgian population towards Latin American ethnic food consumption (Verbeke & Poquiqui Lopez, 2005).

## 5. Conclusions

Very few structured studies have been carried out on eastern European food habits, especially in relation to traditional foods. A relatively recent paper (Biloukha & Utermohlen, 2000) dealt almost exclusively with broad food categories, and is limited to the local educated Ukrainian urban population. No intercultural or cross-cultural studies are available.

To the best of our knowledge, our results represent the first attempt to investigate the awareness and acceptance of foods from eastern Europe in a western European context. The population sample recruited in this investigation, although chosen by convenience, did however include a wide range of categories of a well developed area of Northern Italy.

The food neophobia data of this population are substantially in line with the results of other studies, and may represent a further contribution to the definition of this relevant trait.

In general, the eastern European tradition does not seem to have the exotic fascination of other food cultures, such as Chinese, Indian or Mexican. Being however mostly based on temperate-zone crops, it can offer opportunities for the differentiation of small-scale agriculture in Europe, also connected to the recovery and preservation of biodiversity, and for the development of new food processing and trade enterprises. With this respect, the interest of the younger age groups seems to collocate these developments as viable future opportunities.

With respect to Italians, this work stressed the importance of information for the appreciation of new food traditions, and of education as a determinant for an effective spread of information.

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